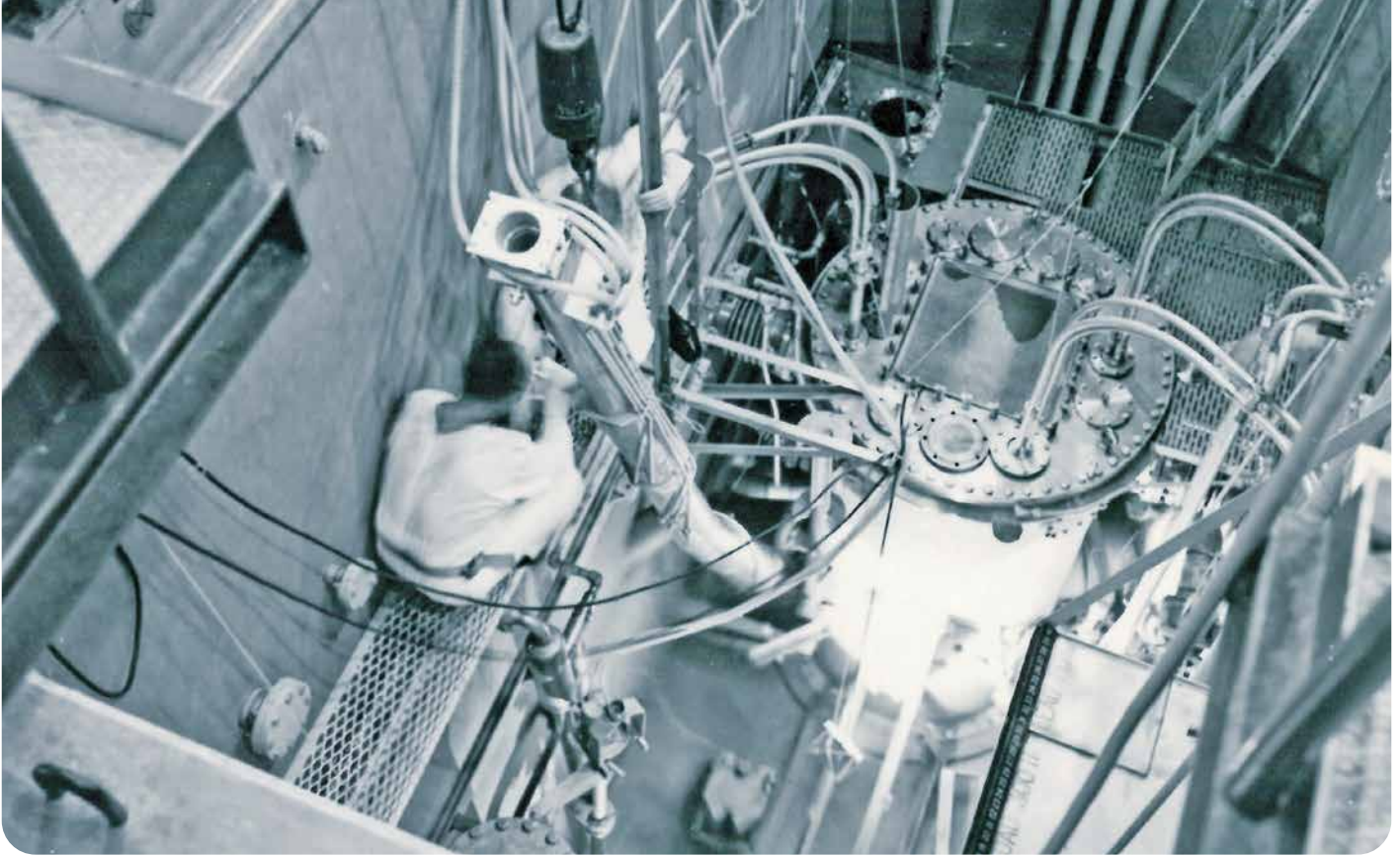




NTP RADIOISOTOPES

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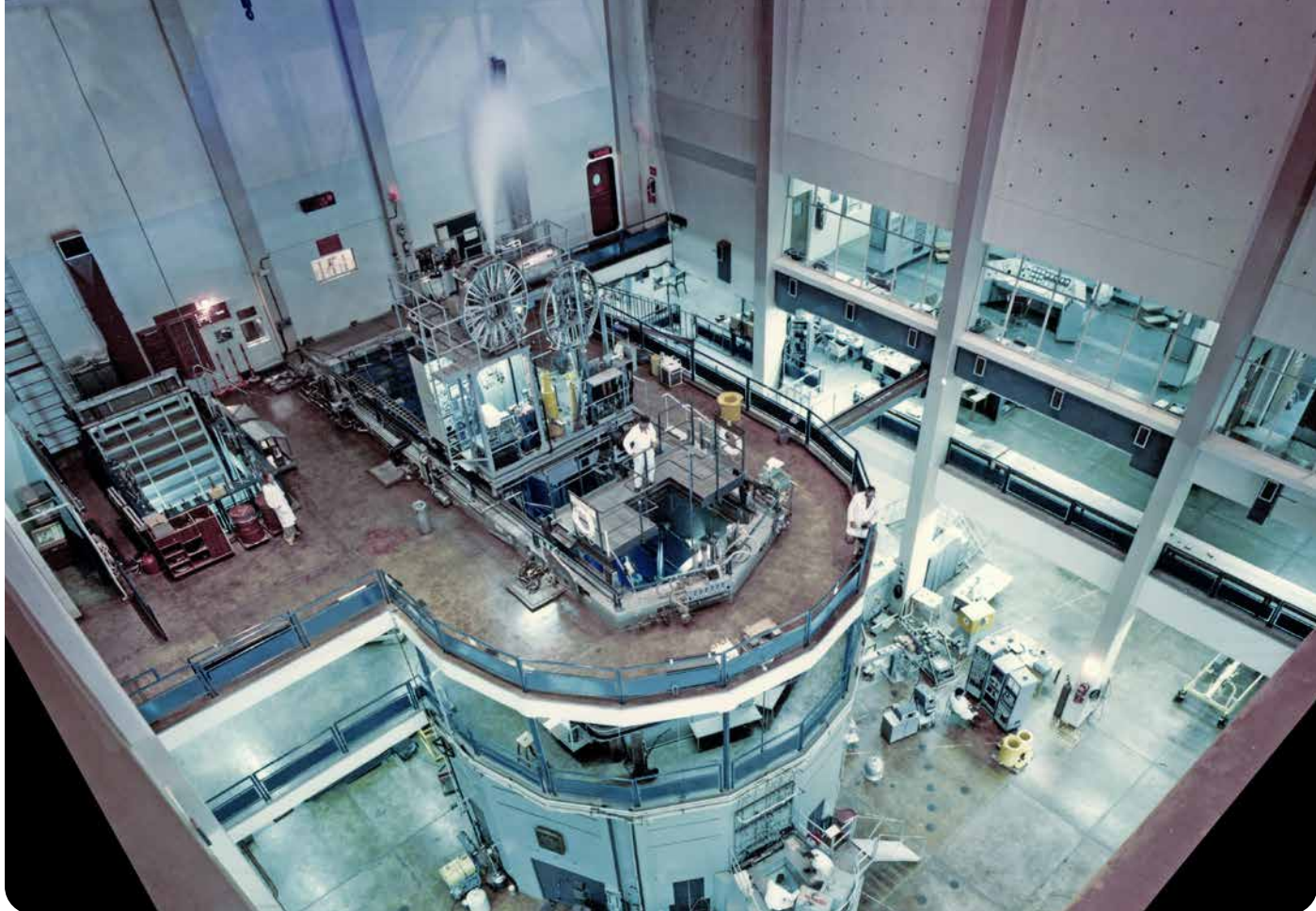


*Pioneers in peaceful applications
for nuclear technology*



PIONEERS IN RADIOISOTOPE PRODUCTION

The first medical radioisotopes to be produced at Pelindaba were manufactured in early 1970s, when the team working at the SAFARI-1 research reactor began to extract small quantities of iodine-131 (I-131) and molybdenum-99 (Mo-99) for the local nuclear medicine market. In 2003, NTP Radioisotopes Ltd was registered as a wholly owned subsidiary of the South African Nuclear Energy Corporation (Necsa). In addition to growing Pelindaba's production of bulk radiochemicals and medical radioisotopes and producing the world's first commercial batches of LEU-based Mo-99 in 2009, NTP also pioneered the use of cyclotron-based FDG F-18 and the production and therapeutic use of beta-emitter lutetium-177 (Lu-177) in South Africa.



Pioneers in nuclear technology

PROPRIETARY TECHNOLOGY

In 1989, the team at Pelindaba designed South Africa's first local technetium-99m (Tc-99m) generator, the Peltek-F, which allowed nuclear medicine practitioners to obtain dose amounts of diagnostic radioisotope Tc-99m from parent isotope Mo-99. This was replaced in 2007 by the NTP-designed NovaTec-P Tc-99m generator.



*significant in global
threat reduction
initiatives.*

The South African nuclear industry dates back to the late 1940s, when the Atomic Energy Act established South Africa's Atomic Energy Board (AEB) to oversee the development of the nation's uranium mining and trade industry.

South Africa's nuclear research and technology programmes began a few years later, under the United States 'Atoms for Peace' programme. In 1957 South Africa signed a bilateral agreement with the United States that resulted in South Africa's acquisition of the 20 MW SAFARI-1 nuclear research reactor and an assured supply of highly enriched uranium (HEU) fuel. In 1970, however, the apartheid government announced South Africa would begin its own independent uranium enrichment programme, and the AEB was split into two new divisions: the Atomic Energy Corporation (which preceded Necsa), and the Uranium Enrichment Corporation or UCOR. Over the next two decades, the local enrichment plant was used to establish a fuel fabrication programme, and as a source for a clandestine nuclear weapons programme. During this time South Africa became increasingly politically isolated, and was expelled from the International Atomic Energy Agency (IAEA). It was only after the early 1990s and the end of apartheid that South Africa was readmitted to the global nuclear technology community. In 1991 South Africa signed the Nuclear Non-proliferation Treaty (NPT) and later opened



its nuclear weapons history to international inspections, becoming the first and only country to abandon its weapons programme voluntarily. In 1996 the African Nuclear Weapon Free Zone Treaty – also known as the Treaty of Pelindaba – was signed in South Africa. In 2009, South Africa made nuclear history again when it became the first major global producer to successfully complete the conversion of the SAFARI-1 research reactor from HEU to low-enriched uranium (LEU) fuel, marking a significant milestone in global threat reduction initiatives.

South Africa has emerged as a champion and a pioneer of both global nuclear non-proliferation and access to the peaceful application of nuclear energy through its custodian, the South African Nuclear Energy Corporation (Necsa).

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